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EXAMINER	
WU, XIAO MIN	

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/722,948	MARRIOTT ET AL.	
	Examiner	Art Unit	
	XIAO M. WU	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/2/2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25,27-30 and 34-39* is/are rejected.

7)☒ Claim(s) *26 and 31-33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/17/06; 11/30/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5-13, 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Bertram et al. (US Patent No. 5,613,137).

As to claim 1, Bertram discloses a touch pad assembly, comprising: a touch pad having one or more sensors (see Fig. 4) that map the touch pad plane into native sensor coordinates (see col. 20, lines 36-51); and a controller that divides the surface of the touch pad into logical device units (200, 206, 208, 212, 214, Fig. 4), receives the native values of the native sensor coordinates from the sensors (202, Fig. 3), adjusts the native values of the native sensor coordinates into a new value associated with the logical device units and reports the new value of the logical device units to a host device (col. 20, lines 5-51), the logical device units representing areas of the touch pad that can be actuated by a user (col. 20, line 62 to col. 21, line 10).

As to claims 5, 17, Bertram discloses that controller further determines if a significant change has been made between the current and last received native values, and only reports the new value when a significant change has been made between the current and last received native

values (e.g. when the user touch different regions 206, 208, 212, 214, the function of the last touch region will be activated).

As to claim 6, Bertram discloses the native sensor coordinates (215, Fig. 4) are Cartesian coordinates.

As to claim 7, Bertram discloses the native sensor coordinates are Polar coordinates (e.g. the regions 206, 208 are defined by a center and radius).

As to claim 8, Bertram discloses logical device units (e.g. 215 of Fig. 4) are Cartesian coordinates.

As to claim 9, Bertram discloses the logical device units (206, 208, Fig. 4) are Polar coordinates.

As to claim 10, Bertram discloses the new value of the logical device units are reported in an absolute mode (see col. 18, lines 59-65).

As to claim 11, Bertram discloses the new value of the logical device units are reported in a relative mode (see col. 15, lines 20-34).

As to claim 12, Bertram discloses the new value of the logical device units are reported in a Cartesian absolute mode, a Cartesian relative mode, a Polar absolute mode or a Polar relative mode (see col. 18, lines 59-65; col. 15, lines 20-34).

As to claim 13, Bertram discloses the new value of the logical device units implements a specific control function in the host device (see col. 23, lines 7-15).

As to claim 16, Bertram discloses one or more touch buttons having one or more sensors, and wherein the controller receives a native value from the sensors (see Fig. 4), determines a button status from the native value, and reports the button status to a host device, the button

status being used by the host device to implement a button function in the host device (see col. 23, lines 7-15).

As to claim 18, Bertram discloses each of the logical device units represent a different movement direction on a display screen of the host device so as to enable joystick implementations, multiple dimensional menu selection or photo image panning (see col. 17, line 65 to col. 18, line 48).

As to claim 19, Bertram discloses the host device is a media player (Fig. 1A) for storing and playing media such as audio, video or images, the media player including a housing that supports the touch pad (19, Fig. 1A) assembly, a display (16, Fig. 1A) for displaying text and graphics to a user of the media player and a CPU (36, Fig. 1A) capable of receiving the new value of the logical device units from the controller and issuing commands based on the new value of logical device units to other components of the media player, the commands being used to at least move an object on the display (see TABLE as shown in col. 17).

3. Claims 29-30, 34-36 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Yates et al. (US Patent No. 6,750,803).

As to claim 29, Yates discloses a signal processing method for a controller of a touch pad, comprising: receiving a current user location (e.g. one touch section of the touch pad 28); determining the difference in user location by comparing the current user location to a last user location (e.g. previous touch section of the touch pad 28); only outputting the current user location when the difference in user location is larger than a threshold value (e.g. determining the touch is within the grid or outside of the grid); converting the outputted current user location into a logical device unit; and generating a message for a host device (e.g. highlight the display object

in accordance with the touch position), the message including the more logical user location (see Fig. 4A), the more logical user location being used by the host device to move a control object in a specified manner (see col. 6, lines 16-52).

As to claim 30, Yates discloses the threshold value is defined as the number of sensor levels (e.g. touch or un-touch) that need to change in the touch pad in order to report a change in the user location.

As to claim 34, Yates discloses storing the current user location for subsequent processing, the current user location acting as the last user location in subsequent processing (e.g. the computer is always tracking the current touch position).

As to claim 35, Yates discloses in a computer system that facilitates bidirectional communications between a touch pad assembly (12, Fig. 1) and a host device (20, Fig. 1), a message from the touch pad assembly to the host device (see Figs. 3 and 4A), the message comprising: an event field identifying whether the message is a touch pad event (e.g. touch signal from the touch pad 28) or a button event (touch button 72,74,76)); an event identifier field identifying at least one event parameter (Fig. 4A), each event parameter having an event value, the event value for a touch pad event parameter indicating an absolute position (col. 4, lines 12-14), the event value for a button event parameter indicating button status (Figs. 4A, 4B).

As to claim 36, Yates discloses a touch pad assembly (12, Fig. 1) capable of transforming a user action into motion onto a display screen (20, Fig. 1), the touch pad system including a touch pad (28) whose entire touch sensing surface is divided into a plurality of independent and spatially distinct actuation zones (see Fig. 3), each of which includes a plurality of sensing nodes

of the touch sensing surface and each of which represents a different control function (e.g. each section of the touch pad 28 is corresponding to the display icon on the screen 22).

As to claim 38, Yates discloses the actuation zones are substantially the same size and shape and include substantially the same number of sensing nodes of the touch sensing surface (see Figs. 7 and 8).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram et al. (US Patent No. 5,613,137) in view of Matzke et al. (US patent No. 4,736,191).

As to claim 14, it is noted that Bertram does not specifically disclose the logical device units are angular Polar units distributed around the surface of the touch pad in a clock like

manner. Matzke is cited to teach a touch pad device similar to Bertram. Matzke further discloses that the touch pad includes logical device units are angular Polar units distributed around the surface of the touch pad in a clock like manner (24, Fig. 1). It would have been obvious to one of ordinary skill in the art to have modified Bertram with the features of the angular polar units of the touch pad as taught by Matzke because Matzke provide the manner in which the sectors are arranged, the user can command movement of the cursor in essentially any angular direction rather than being limited to translation of the cursor in only certain angular directions, as is the case with conventional touch pad positions (see col. 3, lines 26-32).

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram et al. (US Patent No. 5,613,137)

As to claim 15, it is noted that Bertram further discloses that the set-mapping-units commands allows application programs to define different units for the define-a-region command, thereby allowing the operating system to support touchpad of different resolution (col. 20, lines 36-40). Although Bertram does not specifically disclose the ratio of native sensor coordinates to logical device units is between about 1024:1 to about 8:1, it would have been obvious to one of ordinary skill in the art to have designed different resolution of the touch pad so as to create different sensitivity of the touch pad.

8. Claims 2-4, 20-25, 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram et al. (US Patent No. 5,613,137) in view of Yoshinobu et al. (US Patent No. 5,777,605)

As to claims 2, 20, Bertram discloses a method for a touch pad, comprising: mapping the touch pad (Fig. 4) into native sensor coordinates (see col. 20, lines 36-51); producing native values of the native sensor coordinates (206, 208, 212, 214, Fig. 4) when events occur on the

touch pad, and generating a control signal based on the native values of the native sensor coordinates when a desired event occurs on the touch pad (see col. 20, line 62 to col. 21, line 10).

It is noted that Bertram does not specifically disclose filtering the native values of the native sensor coordinates based on the type of events that occur on the touch pad. Yoshinobu is cited teach a touch pad device similar to Bertram. Yoshinobu further discloses filtering the native values of the native sensor coordinates based on the type of events (e.g. relative or absolute coordinates) that occur on the touch pad (see S5-S6, Fig. 5). It would have been obvious to one of ordinary skill in the art to have modified Bertram with the features of the filtering as taught by Yoshinobu because Yoshinobu provide determining different mode of coordinates based on a touch.

As to claim 21, Bertram discloses the control signal includes the native values of the native sensor coordinates (see col. 20, line 62 to col. 21, line 10).

As to claim 22, Bertram discloses adjusting the native values of the native sensor coordinates into a new value when a desired event occurs on the touch pad, the control signal including the new value (e.g. absolute mode).

As to claim 23, Bertram discloses the new value has the same units (210) as the native values (215).

As to claim 24, Bertram discloses the new value (206, 208, 212, 214) has different units as the native values (215).

As to claims 3-4, 25, 27-28, Yoshinobu discloses determining if the native values are caused by noise events or actual events; and filtering out noise events and passing actual events (see Fig. 5 of Yoshinobu).

9. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yates et al. (US Patent No. 6,750,803) in view of Bertram et al. (US Patent No. 5,613,137).

It is noted that Yates does not specifically disclose each of the actuation zones are button zones that represent different movement direction on the display screen so as to enable joystick implementations, multiple dimensional menu selection. Bertram is cited to teach a touch pad device similar to Yates. Bertram further discloses each of the touch pad device units represent a different movement direction on a display screen of the host device so as to enable joystick implementations, multiple dimensional menu selection or photo image panning (see Fig. 2A). it would have been obvious to one of ordinary skill in the art to have modified Yates with the features of the touch having directional control as taught by Bertram because Bertram provides a multiple functions touch device in addition to menu control.

10. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yates et al. (US Patent No. 6,750,803) in view of Matzke et al. (US patent No. 4,736,191).

As to claim 39, it is noted that Yates does not specifically disclose the touch sensing surface is circular, wherein the touch sensing nodes of the touch sensing surface are positioned at least angularly around the circular touch sensing surface, and wherein the actuation zones are positioned at least angularly around the circular touch sensing surface. Matzke is cited to teach a touch pad device similar to Bertram. Matzke further discloses that the touch pad includes the touch device is circular and the touch sensing nodes (e.g. sensors) distributed around the surface of the touch pad in a clock like manner (24, Fig. 1). It would have been obvious to one of ordinary skill in the art to have modified Yates with the features of the angular polar units of the touch pad as taught by Matzke because Matzke provide the manner in which the sectors are

arranged, the user can command movement of the cursor in essentially any angular direction rather than being limited to translation of the cursor in only certain angular directions, as is the case with conventional touch pad positions (see col. 3, lines 26-32).

Allowable Subject Matter

11. Claims 26 and 31-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

None of the prior art references, alone or in combination, discloses or fairly suggests the limitations of "wherein the step of determining comprises: comparing a current set of native values with a last set of native values; classifying the current set of native values as noise events when the current set of native values is substantially similar to the previous set of native values; and classifying the current set of native values as actual events when the current set of native values is significantly different than the previous set of native values" as recited in claim 26.

None of the prior art references, alone or in combination, discloses or fairly suggests the limitations of "the threshold is determined by the following equation: Threshold(T)=C*(native sensor resolution of the touch pad/logical device resolution of the touch pad), where the native sensor resolution defines the maximum number of different user locations that the sensors of the touch pad are able to detect over the touch pad plane, the logical device resolution defines the number of logical device units that the touch pad reports to the host device, and C defines the

width border area between clusters of sensors of the touch pad that define one logical device unit" as recited in claim 31.

Response to Arguments

12. Applicant's arguments filed 10/2/2006 have been fully considered but they are not persuasive.

With respect to claim 1, applicant argues that Bertram does not teach or suggest mapping the touch pad into logical device unit. This argument is not persuasive. In applicant's specification, applicant defines that the touch pad assembly also includes a controller that divides the surface of the touch pad into **logical device units that represent areas of the touch pad that can be actuated by a user** (see [0015]). Therefore, the logical device units are different touch areas on the touch pad. Bertram clearly shows that the touch pad including different touch areas (e.g. logical device units) as shown in Fig. 4.

With respect to claim 5, applicant argues that Bertram is completely silent to only reporting the touch location when the touch location has changed significantly. This argument is not persuasive because Bertram clearly discloses that a new value (e.g. new touch function) would be outputted when the touch location is changed significantly.

With respect to claims 7-9, applicant argues that Bertram does not disclose the native sensor coordinates are polar coordinates. This argument is not persuasive because Bertram shows that the touch areas are in circular shapes and the coordinates of the circular area could be defined in a polar coordinate system in a simple way.

With respect to claim 12, Bertram clearly shows an absolute mode (col. 18, lines 59-65) and a relative mode (col. 15, lines 20-34).

With respect to claims 29-30, applicant argues that Yates does not disclose "determining the difference in user location by comparing the current user location to a last user location... only outputting the current user location when the difference user location in a last user location is larger than a threshold value". This argument is not persuasive because Yate discloses that the touch pad have different active sections such that a new location is detected in a new section which is different from a previous section, a message is generated when the touch pressure is greater than a threshold value.

With respect to claim 35, Yate clearly teaches message format from the touch pad (28) and from the buttons (72, 74, 76) in the input device.

With respect to claim 36, application argues that Yates does not teach or suggest dividing the entire surface into icons. This argument is not persuasive. As shown in Fig. 3, the touch pad is dividing the entire surface into icons (e.g. VC1 to VC6).

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAO M. WU whose telephone number is 571-272-7761. The examiner can normally be reached on 6:30 am to 4:00 pm.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

x.w.

December 8, 2006

XIAO M. WU
Supervisory Patent Examiner
Art Unit 2629